



## ecology and environment, inc.

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Chris D. Field  
Environmental Protection Agency  
1200 Sixth Avenue, HW-114  
Seattle, WA 98101

Ref: TDD T10-9503-007

Dear Chris:

The following information addresses potential threats to human health or welfare or the environment from contaminants at the Winlock Dump site. This information was prepared at the request of the OSC.

The main contaminant of concern at the site is lead, which was found at levels of up to 11,000 ppm in surface waste areas and over 13,000 ppm in embankment fill areas. These levels far exceed the cleanup goal of 1,000 ppm established by the state of Washington for soils at industrial sites (MTCA 1993).

Lead-contaminated soils pose a potential public health threat because lead has been shown to be toxic to humans when ingested or inhaled as dust. Lead is classified as a probable human carcinogen, and effects of lead exposure in humans include brain and kidney damage, decreased visual sensory function, learning ability deficits, and damage to the male reproductive system. Unborn children and young children are particularly sensitive to lead exposure (ASTDR 1992). Potential contamination pathways from the site include direct contact with soils, inhalation of contaminated dust, and ingestion of contaminated groundwater or surface waters associated with the site.

Contamination at the site also poses a threat to the environment. Plants may take up lead via atmospheric deposition or uptake from soil; wetland plants in particular have been shown to accumulate lead in roots (Mitsch and Gosselink 1993). Animals may be impacted by ingesting contaminated plants or soil. Because the site is located in a wetland, impacts may be more consequential than in an upland site. Wetlands serve as transfer points between terrestrial and aquatic ecosystems; thus, contaminants present in site soils or waste areas may be transported to shallow and subsurface waters. Aquatic organisms in Olequa Creek and its receiving waters may be affected, as lead is toxic to all aquatic biota and can be transferred through the food chain (ASTDR 1992).

Several other contaminants were found at the site, including arsenic, chromium, and mercury. Concentrations of these contaminants were above background levels but below federal screening levels and state cleanup goals. Total petroleum hydrocarbons were found in concentrations far exceeding Washington state cleanup goals (MTCA 1993) and may contribute to the potential threats to human health or welfare or the environment posed by the site.

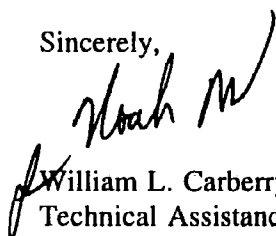
References are as follows:

Agency for Toxic Substances and Disease Registry (ASTDR). 1992. Draft Toxicological Profile for Lead. U.S. Department of Health and Human Services;

Model Toxics Control Act (MTCA) Cleanup Regulation. 1993. WAC 173-340.

Mitsch and Gosselink. 1993. Wetlands. Van Nostrand Reinhold, New York.

Sincerely,



William L. Carberry  
Technical Assistance Team Leader

cmd/thl

Enclosure

cc: Beth Feeley, EPA-OSC